

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A process for obtaining a pure aliphatic dialdehyde monoacetal by comprising reaction of the corresponding aliphatic dialdehyde or a precursor of the corresponding aliphatic dialdehyde with one or more aliphatic mono- or polyhydric alcohols while distillatively removing water to obtain a reaction mixture which is separated distillatively, said process further comprising ~~which comprises~~ carrying out the distillative separation continuously in (i) a dividing wall column to obtain pure aliphatic dialdehyde monoacetal as a sidestream from the dividing wall column, or (ii) in two distillation columns to obtain crude aliphatic dialdehyde monoacetal as a sidestream in the first distillation column, ~~feed~~ feeding the crude aliphatic dialdehyde monoacetal to the second distillation column, and ~~obtain~~ obtaining pure aliphatic dialdehyde monoacetal as the sidestream from the second distillation column.
2. (Original) A process as claimed in claim 1, wherein the reaction mixture is heated to from 80 to 130°C before the distillative separation.
3. (Currently Amended) A process as claimed in ~~either of claims~~ claim 1 ~~or 2~~, wherein the reaction mixture is heated for at least 15 minutes, ~~preferably from 30 minutes to 4 hours, more preferably for 1 hour, preferably at from 90 to 110°C.~~
4. (Currently Amended) A process as claimed in ~~any of claims~~ claim 1 ~~to 3~~, wherein the aliphatic dialdehyde is a substance ~~from the following list:~~ selected from the group consisting of malonaldehyde, succinaldehyde, glutaraldehyde, and ~~or~~ adipaldehyde.
5. (Currently Amended) A process as claimed in claim 4, wherein the aliphatic dialdehyde used is glutaraldehyde, ~~preferably in aqueous solution, more preferably as a 50% by weight aqueous solution,~~ or its precursor, 2-hydroxy-3,4-dihydro-2H-pyran.
6. (Currently Amended) A process as claimed in ~~any of claims~~ claim 1 ~~to 5~~, wherein the aliphatic mono- or polyhydric alcohol is a diol, ~~in particular ethylene glycol, 1,2-propylene~~

glycol, ~~1,3 propylene glycol, 1,2 butanediol, 1,3 butanediol or 1,4 butanediol, more preferably ethylene glycol.~~

7. (Currently Amended) A process as claimed in claim ~~5 or 6~~, wherein glutaraldehyde is reacted with ethylene glycol in a molar ratio in the range from 1:1.5 to 1.5:1, ~~preferably from 1:1.2 to 1.2:1, more preferably of 1.0:1.0.~~

8. (Currently Amended) A process as claimed in ~~any of claims claim 1 to 7~~, wherein the reaction is carried out in the presence of an acidic catalyst, ~~in particular of a cation exchanger, of a mineral acid, preferably sulfuric acid, hydrochloric acid, more preferably orthophosphoric acid, or an organic acid, in particular acetic acid, p-toluenesulfonic acid or methanesulfonic acid, in a concentration of from 0.02 to 5% by weight, preferably from 0.1 to 1% by weight, more preferably of 0.3% by weight, based on the total weight of the reaction mixture.~~

9. (Currently Amended) A process as claimed in ~~any of claims claim 1 to 8~~, wherein the optionally heated reaction mixture is continuously separated in two distillation columns to remove the crude aliphatic dialdehyde monoacetal as a sidestream in a first distillation column and the pure aliphatic dialdehyde monoacetal as a sidestream in a second distillation column.

10. (Currently Amended) A process as claimed in ~~any of claims claim 1 to 8~~, wherein the optionally heated reaction mixture is separated in a dividing wall column having a vertical dividing wall which is disposed in the longitudinal direction of the column and divides the column into a feed region, a takeoff region, a lower combined column region and also an upper combined column region, to recover pure aliphatic dialdehyde monoacetal as a sidestream from the withdrawal region.

11. (Currently Amended) A process as claimed in ~~any of claims claim 1 to 10~~, wherein the distillative separation of the optionally heated reaction mixture is carried out with the addition of a high-boiling diluent in the lower region of the first distillation column or in the upper combined column region of the dividing wall column.

12. (Currently Amended) A process as claimed in claim 11, wherein the high-boiling diluent is a substance or a mixture of substances selected from the group consisting of~~following listed groups~~: alkanes, aromatics or polyethers, preferably polypropylene glycols, and ~~or~~ polyethylene glycols, ~~more preferably polyethylene glycol having an average molecular mass of 300.~~
13. (New) A process as claimed in claim 3, wherein the reaction mixture is heated from 30 minutes to 4 hours, at from 90 to 110°C.
14. (New) A process as claimed in claim 13, wherein the reaction mixture is heated for 1 hour.
15. (New) A process as claimed in claim 5, wherein the glutaraldehyde is used in aqueous solution.
16. (New) A process as claimed in claim 15, wherein the aqueous solution of glutaraldehyde is a 50% by weight aqueous solution.
17. (New) A process as claimed in claim 6, wherein the aliphatic diol is selected from the group consisting of ethylene glycol, 1,2-propylene glycol, 1,3-propylene glycol, 1,2-butanediol, 1,3-butanediol, and 1,4-butanediol.
18. (New) A process as claimed in claim 17, wherein the aliphatic diol is ethylene glycol.
19. (New) A process as claimed in claim 7, wherein glutaraldehyde is reacted with ethylene glycol in a molar ratio in the range from 1:1.2 to 1.2:1.
20. (New) A process as claimed in claim 19, wherein glutaraldehyde is reacted with ethylene glycol in a molar ratio in the range from 1.0:1.0.
21. (New) A process as claimed in claim 8, wherein the acidic catalyst is selected from the group consisting of a cation exchanger, a mineral acid, and an organic acid.

22. (New) A process as claimed in claim 12, wherein the polyethylene glycol has an average molecular mass of 300.